Incoming
M/001/0082
cc- Peter

State of Utah

GARY R. HERBERT
*Governor*

SPENCER J. COX
*Lieutenant Governor*

Department of
Environmental Quality

Amanda Smith
*Executive Director*

DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
*Director*

JAN 08 2015

Mr. Ross Phillips
Chief Operating Officer
Utah Alunite Corp.
170 South Main, Suite 500
Salt Lake City, UT 84101

Dear Mr. Phillips:

Subject: Approval of Monitoring Plan Proposal, Ground Water Discharge Permit No. UGW010015

The Division of Water Quality (DWQ) has reviewed the Monitoring, Sampling and Analysis Plan submitted by Utah Alunite Corporation (UAC) on July 31, 2014. The Plan was submitted in response to compliance schedule items contained in UAC's ground water discharge permit in Parts I.H.3 and 4. The compliance schedule called for UAC to submit a water quality sampling and analysis plan within 30 days of permit issuance and to submit a plan for a monitoring well network within 60 days. The compliance schedule item in Part I.H.2 requires UAC to conduct a subsurface investigation of the area that will be covered by tailings and impounded water that was used to transport the tailings, to identify any zones that may have permeability higher than UAC represented in its permit application, and to identify possible pathways that may allow tailings water to migrate in the subsurface. The report on this investigation is due at least 60 days prior to any tailings or water being released to the tailings disposal area.

The sampling and analysis plan meets the requirements outlined in the permit and is hereby approved. The plan is incorporated as an enforceable appendix to the permit.

UAC's proposal for a monitoring well network is to install two closely-spaced monitoring wells, immediately down-gradient of the settlement pond, in addition to monitoring existing well MW-9. The shallow well is expected to be drilled to a depth of 25 to 30 feet and the deep well to about 80 feet.

According to Part I.H.3 of UAC's ground water discharge permit, the monitoring well network should be designed to:

- Determine the depth to the uppermost aquifer, as defined in UAC R317-6-1, immediately down gradient of the permitted facilities.
- Define the geologic structure, stratigraphy and likely ground water flow paths in the bedrock immediately down gradient of these facilities.
- Provide the capacity to monitor changes in ground water elevation in the uppermost aquifer and to take samples from it.
- Provide for the capacity to evaluate whether seepage from the permitted facilities or ground water mounding is occurring along the entire down gradient extent of the tailings disposal area and the collection and settlement ponds.

UAC's proposal for a monitoring well network was developed according to the permit's timetable, before the required subsurface investigation was completed. Considering the state of knowledge on the site conditions the current proposal is appropriate and is hereby approved for well construction. However, the proposed tailings disposal area is quite large, approximately one square mile, and the two proposed wells may not provide enough coverage to accomplish the goals outlined in the permit.

UAC represented in its permit application that the entire area where tailings disposal will take place, as well as the area where the collection and settlement pond impoundments will be constructed, is underlain by altered volcanic tuff with low permeability. The goal of the subsurface investigation required in Part I.H.2 of the permit is to identify whether these low-permeability deposits do underlie this entire area, or whether zones of higher permeability exist. If the investigation reveals that there may be other potential pathways of ground water migration under the tailings disposal site and associated impoundments, additional ground water monitoring and well construction may be required.

The permit requires that a report on this investigation must be submitted to DWQ at least 60 days before tailings are disposed in the area. Please contact me at (801) 536-4358 or mnovak@utah.gov if you have any questions or would like to discuss the regulatory implications of findings in the subsurface investigation.

Sincerely,

Mark Novak

Mark Novak, P.G., Environmental Scientist
Ground Water Protection Section

MN:nf

cc: Southwest Utah Health Dept.
Paul Baker, DOGM

DWQ-2014-010993